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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/629,407

07/29/2003

Jae-Soon Lim

5649-1132

7226

20792

7590

08/01/2006

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EXAMINER

THOMAS, TONIAE M

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/629,407	<b>Applicant(s)</b> LIM ET AL.	
	<b>Examiner</b> Toniae M. Thomas	<b>Art Unit</b> 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. This Office action is responsive to the reply filed on 05 May 2006.
2. Currently, claims 1-9 and 11-33 are pending.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-9 and 11-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claims 1, 14, 24, 32, and 33 have been amended to recite a limitation wherein the dielectric layer is formed at a second temperature, which is substantially the same as the temperature at which the protective/reaction-preventing layer is formed (claim 1, lines 8-9; claim 14, lines 7-9; claim 24, lines 15-17; claim 32, lines 9-11; and claim 33, lines 7-9). The specification as originally filed does not provide support for this claimed subject matter. The specification clearly states that both the protection/reaction-preventing layer and the dielectric layer are formed *at about 600°C or less* (for the temperature

at which the dielectric layer is formed, see the specification at page 10, line 30 - page 11, line 2 and page 16, lines 18-22; and for the temperature at which the protection/reaction-preventing layer is formed, see the specification at page 7, lines 18-25; page 10, lines 9-14; and page 15, line 30 - page 16, line 9).

However, this simply means that the temperature at which the protection/reaction-preventing layer and the dielectric layer are formed cannot exceed a temperature of about 600°C. The fact that the temperature at which the protection/reaction-preventing layer and the dielectric layer are formed cannot exceed 600°C does not mean that the temperature at which the dielectric layer is formed is substantially the same as the temperature at which the protection/reaction-preventing layer is formed. Moreover, nowhere in the specification does it state that the dielectric layer is formed at substantially the same temperature as the protection/reaction-preventing layer. Therefore, while the specification provides support for forming both the dielectric layer and the protection/reaction-preventing layer *at about 600°C or less*, the specification does not provide support for forming a dielectric layer on the protection/reaction-preventing layer at a temperature substantially the same as the temperature at which the protection/reaction-preventing layer is formed.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-9 and 11-33 have been considered, but are not persuasive. In the reply filed on 05 May 2006, Applicant argues that the specification does provide support for the added

limitation “forming a dielectric layer on the protection/reaction-preventing layer at a temperature substantially the same as the temperature at which the protection/reaction-preventing layer is formed.” As explained above, the specification as originally filed does not provide support for forming a dielectric layer at a temperature substantially the same as the temperature at which the protection/reaction-preventing layer is formed. Applicant further cites, as evidence to support the allegation that the specification does provide support for this limitation, a portion of the certified English translation at page 14, lines 4-5. However, the cited portion of the certified English translation provides evidence to the contrary. Specifically, the cited portion recites that the dielectric layer is formed “at a temperature of about 600°C or less” (see page 14, line 3). The cited portion further states that the processing chamber is set to about 600°C and more preferably to about 450°C (see page 14, lines 4-5). This in no way provides support for forming a dielectric layer at a temperature substantially the same as the temperature at which the protection/reaction-preventing layer is formed, as recited in claims 1, 14, 24, 32, and 33. Accordingly, the rejection of claims 1-9 and 11-33 under 35 USC 112, first paragraph, as made of record in the Office action mailed on 09 February 2006, is maintained in this Office action.

5. Claims 1-9 and 11-33 are rejected in this Office action under 35 USC §112, first paragraph only. The prior art of record does not anticipate, teach or suggest a method for forming a capacitor substantially as claimed, wherein the

method comprises: forming a protection layer/reaction-preventing layer on a lower electrode at a first temperature without a phase change of the lower electrode, and forming a dielectric layer on the previously formed protection/reaction-preventing layer at a second temperature substantially the same as the temperature at which the protection/reaction-preventing layer is formed.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toniae M. Thomas whose telephone number is (571) 272-1846. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TMT  
24 July 2006

A handwritten signature in black ink, appearing to read 'Mary Wilczewski', with a long horizontal line extending to the right.

**Mary Wilczewski**  
**Primary Examiner**